AP Statistics Ch. 11: Simulation

What is random??

RANDOM =

Examples:

How do we generate random numbers?

TABLE OF RANDOM DIGITS:

CALCULATOR:

FLIPPING COIN, ROLLING DIE, ETC.

SIMULATION =

* Assign…
* Use…
* TRIAL =
* RESPONSE VARIABLE =
* Two ways to stop your simulation:

EXAMPLE: A baseball player gets a hit in 30% of his at-bats. Simulate him coming to bat 12 times.

1. Identify the outcomes and their probabilities
2. Decide on your generator and assign the events to the generator
3. What is your response variable? Create a table to record
4. Read across the table to simulate one trial. Record results. Repeat.
5. Stop when…

EXAMPLE: Picking a card and looking at the suit. Simulate 10 picks.

1. Identify the outcomes and their probabilities
2. Decide on your generator and assign the events to the generator
3. What is your response variable? Create a table to record
4. Read across the table to simulate one trial. Record results. Repeat.
5. Stop when…

Example: A certain Stat class has 46% males in the class. Simulate the teacher picking 8 students at random and recording their gender.

1. Identify the outcomes and their probabilities
2. Decide on your generator and assign the events to the generator
3. What is your response variable? Create a table to record
4. Read across the table to simulate one trial. Record results. Repeat.
5. Stop when…

EXAMPLE: A spinner has 4 sections: 50% Red, 13% Blue, 12% Green, 25% Yellow. Simulate spinning the spinner 20 times.

1. Identify the events and their probabilities
2. Decide on your generator and assign the events to the generator (numbers)

EXAMPLE: Back to the baseball player who gets a hit 30% of the time. Assume he gets on average 3 at-bats per game. Simulate 15 games, recording the number of hits per game.

1. Identify the outcomes and their probabilities
2. Decide on your generator and assign the events to the generator
3. What is your response variable? Create a table to record.
4. What is 1 trial?
5. Read across the table to simulate one trial. Record results. Repeat
6. Stop when....

EXAMPLE: Back to the stat class… it consists of 46% males. A teacher needs to pick a group of 3 students. What is the chance that she gets all 3 males? Simulate this 5 times to make your decision.

1. Identify the outcomes and their probabilities
2. Decide on your generator and assign the events to the generator
3. What is your response variable? Create a table to record.
4. What is 1 trial?
5. Read across the table to simulate one trial. Record results. Repeat
6. Stop when....

EXAMPLE: Picking a card, and looking at the suit. We want to pick cards until we get a HEART. How many cards will we need to pick? Do 5 trials.

1. Identify the outcomes and their probabilities
2. Decide on your generator and assign the events to the generator
3. What is your response variable? Create a table to record.
4. What is 1 trial?
5. Read across the table to simulate one trial. Record results. Repeat
6. Stop when....

Complete the Ch. 11 Simulations worksheet